

MARKET

January 2011

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This report is part of InterTradelreland's First Stop Shop service aiming to assist and advise businesses on the island, on issues of cross-border trade. First Stop Shop comprises these services:

- **A Simple Guide to Cross Border Business:** A practical guide that provides answers to the most common financial and legal questions of operating cross-border.
- **Trade Accelerator Voucher:** A financial support for companies operating in the other jurisdiction to get professional advice in areas such as taxation, employment law, currency, market information or regulation.
- **Market and Industry Information:** InterTradelreland has extensive market and industry information available through the Business Monitor and the Trade Statistics Webpage. This data will help companies to take informed decisions and develop sound strategies.

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Further work was undertaken by InterTradelreland staff, Jani Lopez and Eoin Magennis.

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# EXECUTIVE SUMMARY

This report considers energy management and energy efficiency services, a new sector that involves businesses involved in measuring and managing resource efficiency through a combination of ICT hardware (e.g. sensor technologies) and software, as well as consultancy and efficiency advice activities. The objective of the report is to provide an all-island overview of this important and growing segment of the wider energy industry, with an emphasis on the prospects for indigenous business.

Some of the findings of this report are:

- Estimating the market size and value of the energy management sector is a difficult task, both because of the relative newness of the sector and the fact that many companies also find themselves involved in other business activities, often in associated areas such as renewable energy, waste management and ICT.
- The energy management sector on the island is a diverse one in terms of the types of companies within it. There are, as expected, a large number of small firms serving a domestic market among the 250 or so in the sector. However, there are also some high potential businesses with products and services aimed at a global market.
- The market on the island can be divided into the commercial/industrial, the residential and the public sector. The first segment is the dominant one, given electricity usage and the perception that energy costs are a key competitive challenge.
- There is likely to be increasing employment in the energy management sector in the coming years with skill requirements in areas such as engineering, project management and communications. There is likely to be a particular need for energy engineers and sales staff with a technical ability.

- There are significant fiscal supports for adoption of energy management products and services, from capital allowances to grant supports. In addition rising energy costs and carbon taxes provide additional incentives for uptake.
- A significant number of companies are involved in cross-border trade in the energy management sector, particularly in the industrial/commercial sector. There is very little cross-border trade being done in the public sector energy market, something which may change with new green public procurement guidelines.

# 1. INDUSTRY OVERVIEW

This report looks at the energy management sector on the island of Ireland. The objective is to provide an all-island overview of this important and growing segment of the wider energy industry, with an emphasis on the prospects for indigenous business.

The energy management and energy efficiency services sector involves measuring and managing resource efficiency through a combination of ICT hardware (e.g. sensor technologies) and software, which are areas of strength in both Ireland<sup>1</sup> and increasingly in Northern Ireland. The sector also includes consultancy and efficiency advice activities.

Energy efficiency is a key component of both governments' energy policies. In Ireland the National Energy Efficiency Action Plan 2009-2020 aims to save approximately €1.6 billion by avoiding energy costs by 2020.<sup>2</sup> In Northern Ireland, the Executive has committed to reduce emissions by 25% on 1990 levels by 2025. In addition, the Department of Enterprise, Trade and Industry (DETI) considers that "Energy efficiency and managing demand are pivotal in terms of improving competitiveness and offer a 'win win' in terms of economic and environmental impact. This is particularly important for the business community where persistently high energy costs remain a matter of concern."<sup>3</sup>

It is in this operating context that there has been a significant increase of companies offering energy management services and products in recent years.

There are currently approximately 900 companies involved in the energy sector on the island.<sup>4</sup> Of those companies, around 250 offer energy management products and consultancy services. The sector is expected to continue growing as the regulatory environment and increasing energy costs foster the adoption of energy efficiency systems in business and households across the island.

## Box 1: Energy management products and services

- **Energy audits:** Inspection, survey and analysis of energy flows for energy conservation in a building (domestic or commercial) process or system to reduce the amount of energy input.
- **Energy strategy:** Structured programme to reduce energy consumption and senior management support. Service generally provided to large companies and organisations.
- **Energy monitoring:** Identification of unnecessary energy waste through data collection in order to identify efficient technologies and practices. This is generally done through the use of software applications.
- **Energy procurement services:** Negotiating on behalf of the client with electricity and/or gas suppliers in order to obtain price reductions. Activities within this service include risk assessment and contract review and negotiation.
- **Energy supply contract/Energy management service (ESCOs):** a broad range of comprehensive energy solutions including design and implementation of energy savings projects, energy conservation, energy infrastructure outsourcing, power generation and energy supply, and risk management.
- **Energy management systems:** Computer system(s) designed for the automated control and monitoring of the heating, ventilation and lighting needs of a building or group of buildings. They provide facilities for the reading of electricity, gas and water meters. The data obtained from these can then be used to produce trend analysis and annual consumption forecasts.
- **Building Energy Ratings (BER) Certificates/Energy Performance Certificates (EPC):** Label/certificate indicates the energy rating of a property. The rating is expressed in the form of performance bands, with A being the most energy efficient and G the least energy efficient. This label is a requirement for new buildings in Ireland and Northern Ireland and it derives from an EU directive.
- **Smart meters:** an advanced meter that records consumption in intervals of an hour or less and communicates that information at least daily via some communications network back to the utility for monitoring and billing purposes.

<sup>1</sup> Report of the High-Level Group on Green Enterprise, *Developing the Green Economy in Ireland* (November 2009).  
<sup>2</sup> Department of Communications, Energy and Natural Resources, *Maximising Ireland's Energy Efficiency. The National Energy Efficiency Action Plan 2009-2020* (2009).  
<sup>3</sup> Department of Enterprise, Trade and Industry, *A Draft Strategic Energy Framework for Northern Ireland* (2009).  
<sup>4</sup> Estimate based on the Dun & Bradstreet database of energy companies in Ireland and Northern Ireland.

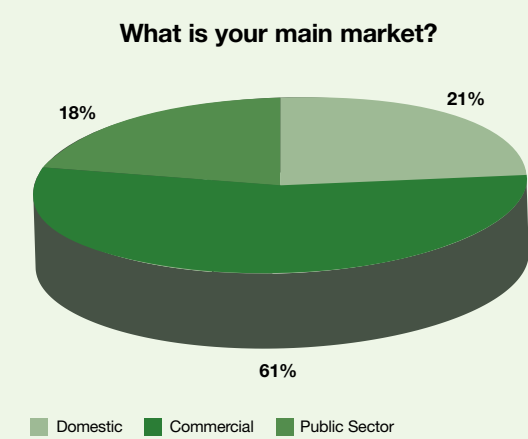
1.1 Market size & segmentation

In a 2008 report published by InterTradelreland and Forfás the value of the market for the environmental goods and services sector on the island was €3.6 billion in 2008.<sup>5</sup> The market value of the main segments of the €2.8 billion market in Ireland for the environmental goods and services sector has been further segmented as follows:<sup>6</sup>

- Renewable energies (€700 million);
- Water/wastewater treatment (€1,000 million);
- Waste management (€550 million);
- Environmental services and other green technologies (€560 million); and
- Eco-building, construction materials and energy efficiency solutions (market value is not available)

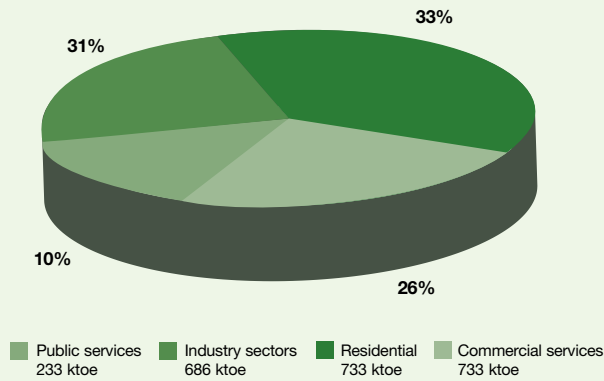
Given that the sector is an emerging one, reliable market figures for energy management solutions and products are difficult to obtain. However, the market can be segmented into three categories: industrial/commercial, public sector and domestic/household. In InterTradelreland’s survey of businesses in the industry, 61% of the companies identified their main market in the commercial and industrial sectors (see Figure 1).

Figure 1: Energy management sector’s markets



This perspective from businesses on the current sources of demand for their energy management solutions is consistent with the figures for electricity usage in Ireland in 2008. Figure 2 shows that the combined industry and commercial services sectors accounted for 57% of electricity usage in Ireland making them a key market for energy management companies. Domestic (or residential) electricity consumption in Ireland during 2008 represented the next highest percentage (33%) with public sector taking up the balance.

Figure 2: Electricity usage in Ireland (2008)



Commercial and industrial market

The commercial and industrial market on the island accounts for 9% of customer connections. Although SMEs and Large Energy Users (LEUs) contain a lot fewer customer connections, Table 1 indicates the extent of their energy usage. Although their efficiency has improved in recent years (particularly among LEUs), the extent of commercial and industrial facilities and the energy-intensive nature of both manufacturing and services processes means that their usage remains significantly greater than the domestic or residential sector.

Table 1: Electricity usage and the number of electricity customers in SMEs and LEUs, 2009-2010

Region	SMEs		Large Energy Users (LEUs)	
	Customers	Usage (MWh)	Customers	Usage (MWh)
Northern Ireland	58,362	3,414,556	167	1,515,407
Ireland	214,439	8,245,423	1588	7,564,981
All-Island	272,801	11,659,979	1755	9,080,388

Source: Ireland figures for 2009: Commission for Energy Regulation (CER)  
Northern Ireland figures for Sep 09-Aug 10: Northern Ireland Authority for Utility Regulation

Within the private sector, energy-intensive industries represent an important market for companies offering energy management products and services. Table 2 shows the usage by manufacturing sectors in Ireland in 2008 and that SEAI identified the following as heavy electricity users: food & drink, chemicals and electrical and optical (ICT) sectors. From their responses to InterTradelreland, companies offering energy management solutions are particularly active in the pharmaceutical sub-sector and the leisure industries.

Table 2: Industrial electricity use in Ireland in 2008 (SEIA)<sup>7</sup>

Industry sector	Electricity usage in Ktoe (kilo tonnes of oil equivalent)
Non-Energy Mining	51
Food, drinks and tobacco	141
Textiles and textile products	7
Wood and wood products	29
Pulp, paper, publishing and printing	22
Chemicals & man-made fibres	107
Rubber and plastic products	35
Other non-metallic mineral products	74
Basic metals and fabricated metal products	39
Machinery and equipment n.e.c.	17
Electrical and optical equipment	133
Transport equipment manufacture	10
Other manufacturing	29

<sup>5</sup> InterTradelreland and Forfás. *Environmental Goods and Services on the island of Ireland: Enterprise Opportunities and Policy Recommendations* (2008).  
<sup>6</sup> High-Level Group on Green Enterprise, *Developing the Green Economy*.

<sup>7</sup> Sustainable Energy Authority of Ireland, Energy Statistics Databank, *Energy Balance*.  
Available at: [www.cso.ie/px/sei/database/SEI/Energy%20Balance%20Statistics/Energy%20Balance%20Statistics.asp](http://www.cso.ie/px/sei/database/SEI/Energy%20Balance%20Statistics/Energy%20Balance%20Statistics.asp)



Domestic and residential market

Table 3 below provides an indication of the size of the domestic market for the energy management sector. For the period 2009-10, domestic customers account for 91% of connections in Ireland and Northern Ireland. For the island as a whole, there are approximately 2.77 million customer connections, which illustrate the potential for energy management products and services in the home.

Table 3: Electricity usage and the number of electricity customers in the domestic sector market, at a Northern Ireland, Ireland and All-Island level

Region	Customers	Usage (MWh)
Northern Ireland	762,163	3,396,411
Ireland	2,011,558	8,973,672
All-Island	2,773,721	12,370,083

Source: Ireland figures for 2009: Commission for Energy Regulation (CER)  
Northern Ireland figures for Sep 09-Aug 10: Northern Ireland Authority for Utility Regulation

Public sector market

According to InterTradelreland’s research, the public procurement market on the island of Ireland was worth circa €19bn in 2008/09 comprising an indicative annual spending of €2.8 bn in Northern Ireland and about €17bn in Ireland.<sup>8</sup> The public sector could entail significant opportunities for the energy management sector, particularly once green public procurement guidelines begin to be implemented on the island.<sup>9</sup> According to the 2009 energy efficiency action plan for Ireland the public sector’s purchasing power “can be used to leverage the market to provide goods and services with the highest energy efficiency standards [and] ... has the potential to act as an early user and pioneer of new and efficient technologies.”<sup>10</sup>

In 2008 public sector electricity consumption in Ireland reached 233 Ktoe, or 10% of total usage (see Figure 2).<sup>11</sup> In Northern Ireland the share of total electricity usage in 2008/09 was similar to that in Ireland at 998,005 MWh (12%).<sup>12</sup>

1.2 Key players

On the island of Ireland, the energy management sector is composed of a variety of companies with different business models, size, product/service offerings and target markets. The range of energy efficiency solutions on the market is also very diverse, with products ranging from DIY to major project management services and advanced software.<sup>13</sup> The following is a brief description of the main categories in which most of the businesses within the sector could be classified:

- **Construction and engineering companies with energy efficiency divisions:** Companies whose main business activity and source of income comes from construction related-activities and offer some energy efficient services such as Energy Performance Certificates (EPC) or Building Energy Ratings (BER). There are also construction groups with energy efficiency divisions like the Fahy Fitzpatrick Group in Ireland or the Patrick McCaul Group in Northern Ireland.
- **Energy service companies / Energy supply contract (ESCOs):** Companies that provide energy savings and/or the provision of energy at lower cost through an energy performance contracting guarantee. The services delivered by these companies could include: Energy analysis, energy management, project design and implementation, as well as maintenance and operation of the systems to ensure energy savings during the payback period. Examples of these types of companies on the island are Imperative Energy or EcoCell Energy.

- **Energy management consultancies:** Companies providing energy efficiency advisory services. These services could include energy assessments, development of energy efficiency programmes or strategies, and energy management.
- **Environmental consultancies:** Companies providing advice and support on environmental compliance issues. Their services can cover a wide variety of fields including energy management but also water and waste management, contaminated land management, risk assessment, and carbon footprint services.
- **Energy control and management systems manufacturers:** Companies developing and offering energy management systems and software energy monitoring and management applications. These are generally IT and/or high tech companies that develop software systems and distribute them through energy management companies or directly to their clients. These types of companies are generally exporters; some examples are ResourceKraft or EFT Control Systems.
- **Independent energy assessors:** Trained and registered assessors who are usually sole traders diversifying from their main trade (plumbing, electrical, construction, surveyor etc). Many energy assessors register in industry directories and/or in directories created by government agencies offering energy efficiency related grants.

1.2.1 Energy management companies

There are approximately 900 energy companies on the island of Ireland. Around 250 of those companies are involved in the provision of energy management products and services. This figure includes energy consultancies; energy service companies (ESCOs), environmental consultancies (with energy management activities) and manufacturers of energy management products. In Annex 1 you will find a non-exhaustive list of energy management companies on the island.

Most of the energy management indigenous businesses on the island are of relatively recent formation and can be classified as micro-enterprises and/or SMEs. Based on a survey undertaken by InterTradelreland, the majority of this business sector is a mix of energy management products and services including: energy consultancy, energy procurement services, energy audits, facilities management, energy management systems and energy efficiency products (either of companies’ own products or as a reseller). A recent Forfás report also found that many of the companies in this sector are also involved in other business activities, often in associated areas such as renewable energy, waste management and ICT.<sup>14</sup>

1.2.2 Development agencies

Ireland

**Enterprise Ireland:** Government agency responsible for the development and promotion of the indigenous business sector. They provide funding for business development in areas of marketing, R&D, exports etc. Through its GreenTech support, Enterprise Ireland helps companies to look at the sustainability of their products and services. The scheme includes categories such as Implementing Environmental Standards, Environmentally Superior Products (ESP), Carbon Management/Reduction including Carbon Footprint Measurement and Applying for Eco labels.  
[www.enterprise-ireland.com](http://www.enterprise-ireland.com)

Northern Ireland

**The Carbon Trust:** The main provider of energy efficiency help for businesses; its services are funded by Invest Northern Ireland. The Carbon Trust produces free publications on energy efficiency such as: self-assessment guides to examine progress in energy management, energy consumption guides, providing benchmarks and comparisons to other businesses, sector-specific fact sheets and good practice case studies.  
[www.carbontrust.co.uk](http://www.carbontrust.co.uk)

<sup>8</sup> InterTradelreland, *All-island public procurement* (October 2009). More recent estimates for 2010 show a decrease to €13 billion, still a huge market.  
<sup>9</sup> The Department of Environment, Heritage and Local Government’s *Towards and Action Plan on Green Public Procurement* consultation paper (May 2010) noted that energy was a priority area for the action plan.  
<sup>10</sup> Department of Communications, Energy and Natural Resources, *Maximising Ireland’s Energy Efficiency. The National Energy Efficiency Action Plan 2009-2020* (2009). This reflects the emphasis in the EU 2020 Strategy on the need for policies and incentives that will promote eco-innovation and the use of energy-efficient products and solutions.  
<sup>11</sup> Sustainable Energy Authority of Ireland, Energy Statistics Databank, *Energy Balance*. Available at: [www.cso.ie/px/sei/database/SEI/Energy%20Balance%20Statistics/Energy%20Balance%20Statistics.asp](http://www.cso.ie/px/sei/database/SEI/Energy%20Balance%20Statistics/Energy%20Balance%20Statistics.asp)  
<sup>12</sup> Department of Finance and Personnel, *Public Sector Energy Campaign 2008-2009*.  
<sup>13</sup> Sector Skills Council, *Low Carbon Cluster. Sector Skills Assessment Report* (December 2009).

<sup>14</sup> Expert Group on Future Skills Needs, *Future Skills Needs within the Green Economy in Ireland* (November 2010).

**Invest NI:** Government agency with the objective to grow the economy by helping new and existing businesses to compete internationally, and by attracting new investment to Northern Ireland. Invest NI has developed energy programmes aiming to help businesses to become more energy efficient and increase their profitability. Their energy team offers free advice and technical services to identify energy efficiency solutions. This team delivers free seminars and workshops on energy topics such as energy-efficient building design. Additional consultancy support is also available from Invest NI.  
**www.investni.com**

**Energy Savings Trust:** Independent, UK-based organisation focused on promoting action that leads to the reduction of carbon dioxide emissions to improve energy efficiency. Through their advice centre, the organisation offers free, comprehensive advice and support on energy efficiency and renewable technologies.  
**www.energysavingtrust.org.uk**

### 1.2.3 Industry networks and associations

#### Ireland

**Irish Software Innovation Network-Green special interest groups:** Green IT Collaborative Clusters to help academics, indigenous software companies and MNC's to address particular problems posed by the Green IT industry in a collaborative fashion. There are subgroups or clusters addressed to topics such as smart metering, smart cities, green data centres and green tech products.  
**www.isin.ie**

**Large Industry Energy Network (LIEN):** Voluntary grouping, facilitated by the Sustainable Energy Authority of Ireland (SEAI), of companies that work together to develop and maintain robust energy management.  
**www.seai.ie/Your\_Business/Large\_Energy\_Users/LIEN**

**Engineers Ireland – Energy and Environment Division:** A division within Engineers Ireland's network of professionals which undertakes activities related to energy policy development, energy conservation technology, renewable energy and energy system development.  
**www.iei.ie**

#### Europe

**The European Alliance of Companies for Energy Efficiency in Buildings:** formed in 1998 by twenty of Europe's leading companies involved in the manufacture, distribution and installation of a variety of energy saving goods and services. The EuroACE member companies together employ 328,000 people and have a turnover of €140 billion.  
**www.euroace.org**

### 1.2.4 Regulatory bodies and agencies

#### Ireland

**Sustainable Energy Authority of Ireland (SEAI):** Set up by the government in 2002 as Ireland's national energy agency. Sustainable Energy Authority of Ireland manages and develops programmes aimed at:

- Assisting deployment of superior energy technologies in each sector as required;
- Raising awareness and providing information, advice and publicity on best practice;
- Stimulating research, development and demonstration;
- Stimulating preparation of necessary standards and codes; and
- Publishing statistics and projections on sustainable energy and achievement of targets.

**www.seai.ie**

**Department of Communications, Energy and Natural Resources:** The Irish Government Department with responsibility for energy policy.  
**www.dcenr.gov.ie**

**Department of Environment, Heritage and Local Government:** The Irish Government Department with responsibility for building regulations and enforcement.  
**www.envron.ie/en**

**Commission for Energy Regulation (CER):** Regulator for the electricity and natural gas sectors in Ireland. It aims to ensure the supply of gas and electricity at fair and reasonable prices.  
**www.cer.ie**

#### Northern Ireland

**Department of Enterprise, Trade and Investment (DETI):** Formulates and delivers economic development policy in terms of enterprise, social economy, innovation, energy, telecoms, and tourism in Northern Ireland.  
**www.detini.gov.uk**

**Department of Energy and Climate Change:** The Department of Energy and Climate Change is responsible for UK energy and climate change policies.  
**www.decc.gov.uk**

**Northern Ireland Housing Executive (NIHE):** The Home Energy Conservation Authority for Northern Ireland (HECA) with responsibility to improve the energy efficiency of the residential accommodation in Northern Ireland by 34%. The NIHE undertakes projects to test viability of renewable and emerging technologies which have, or will be, installed in its properties.  
**www.nihe.gov.uk**

### 1.3 Useful information

**Sustainable Energy Awards – Sustainable Energy Ireland Authority:** The annual Sustainable Energy Awards encourage, recognise and reward excellence in energy management among energy users of all sizes. These all-island awards provide an opportunity for organisations, regardless of size or sector, to gain public recognition for their achievements in reducing energy use and CO2 emissions.  
**www.seai.ie/Your\_Business/Sustainable\_Energy\_Awards**

**Irish energy standard I.S. EN 16001:** Specifies requirements for establishing, implementing, maintaining and improving an energy management system.  
**www.nsai.ie/Our-Services/Standardization.aspx**

**Build up:** European web portal for energy efficiency in buildings. The website provides information such as resources on the Energy Performance of Buildings Directive, guidelines and toolkit and best practice case studies.  
**www.buildup.eu**

**NetRegs:** Web portal that provides free environmental guidance for small and medium-sized businesses in the UK. Its objective is to help companies to comply with environmental law and protect the environment.  
**www.netregs.gov.uk/netregs/default.aspx**

**Envirocentre.ie:** Web portal with environmental information from Enterprise Ireland. It includes information on climate change, renewable energy, energy efficiency and other environmental issues. It is targeted at small-medium enterprises.  
**www.envirocentre.ie**

**Greenbusiness.ie:** Web portal that offers assistance in improving resource efficiency through the provision of online site assessment and benchmarking tools, a telephone helpline and on-site support.  
**www.greenbusiness.ie/about.php**



# 2. INDUSTRY TRENDS

## 2.1 Competitive landscape

### 2.1.1 Labour market

Forfás anticipates that total greentech sector employment in 2015 will be between 23,350 and 29,000 direct jobs – depending on whether growth rates in the sector are 4-5% or 8-10% per annum.<sup>15</sup> In Northern Ireland, the Energy and Environmental economic sector employs 4,500 people in 200 companies and currently has a turnover of £300 million.<sup>16</sup>



Increasing employment in the energy management sector both in Ireland and Northern Ireland will have an impact on skill requirements. According to Forfás, competencies in design, development of products and ensuring a quality service are critical, alongside core skills in engineering, project management and communications. There is a particular need for energy engineers and sales staff with a technical ability.<sup>17</sup>

There are also new roles emerging from the sector such as:

- Energy Assessors;
- Energy Advisors; and
- Air condition system inspectors.<sup>18</sup>

The current offering of formal training and high-level education on energy-related qualifications on the island can be found in the table below.

Table 4: Energy-related qualifications in Ireland and Northern Ireland

Course title	Type/level	Provider
Renewable Energy for Homeowners	Part-time	Belfast Metropolitan College
Building Services and Renewable Energies	Foundation Degree	Belfast Metropolitan College
Land Use & Environmental Management	Undergraduate	Queen's University
Land Use & Environmental Management with Professional Studies	Undergraduate	Queen's University
Energy and Building Services Engineering	Undergraduate (4SW Hon BEng)	University of Ulster
Energy and Building Services Engineering	5SW Hon MEng	University of Ulster
Renewable Energy Training - Introduction to Renewable Energy Technologies Course	Level 5 Certificate	Chevron Training
BER-BER Training - Building Energy Rating Course - Existing Dwellings	Level 6 Certificate	Chevron Training
MSc in Energy Management	Level 9 Certificate	Institute of Technology, Sligo
Energy Efficiency Lighting and Design	Postgraduate NFQ Level 9 Diploma	Chevron Training
Masters Degree in Energy Management (MSc)	Postgraduate	Dublin Institute of Technology
Sustainable Electrical Energy ME	Postgraduate	Dublin Institute of Technology
Energy Management MSc	Postgraduate	Dublin Institute of Technology
Renewable Energy Systems Technology MSc	Postgraduate	Dundalk Institute of Technology (DKIT)
Electronic Engineering - Renewable Energy Systems	Postgraduate Diploma	National University of Ireland, Maynooth
Electronic Engineering - Renewable Energy Systems MSc	Postgraduate	National University of Ireland, Maynooth
Energy Systems Engineering (ME)	Postgraduate	University College Dublin
Advanced Materials For Energy Generation And Transmission	Postgraduate	University of Limerick
Sustainable Energy Engineering MSc	Postgraduate	Waterford Institute of Technology

<sup>15</sup> Expert Group on Future Skills Needs, *Future Skills Needs within the Green Economy in Ireland* (November 2010).

<sup>16</sup> Department of Enterprise, Trade and Industry, *A Draft Strategic Energy Framework for Northern Ireland 2009* (2009).

<sup>17</sup> Expert Group on Future Skills Needs, *Future Skills Needs within the Green Economy in Ireland* (November 2010).

The findings are similar to a UK report: Sector Skills Council, *Low Carbon Cluster. Sector Skills Assessment Report 2009* (December 2009).

<sup>18</sup> The European Centre for the Development of Vocational Training CEFORP, *Future Skill Needs for the Green Economy* (2009).

2.1.2 Regulations

Europe

**Energy Services Directive (ESD) 2006/32/EC:**  
Establishes indicative targets and incentives, as well as institutional, financial and legal frameworks needed to eliminate market barriers and imperfections which prevent efficient end-use of energy; It creates the conditions for the delivery of energy-saving programmes and other measures aimed at improving end-use energy efficiency. The Directive applies to the distribution and retail sale of energy, the delivery of measures to improve end-use energy efficiency, with the exception of activities included in the greenhouse gas emissions trading scheme.

**Energy performance of buildings 2002/91/EC:**  
The Directive sets out a common methodology for calculating the integrated energy performance of the buildings as well as the minimum energy performance standards for new and existing buildings. It concerns the residential sector and the tertiary sector (offices, public buildings, etc.).

Ireland

**Accelerated Capital Allowances for energy efficient equipment:** Section 46 of the Finance Act 2008 provides that companies may claim 100% of the capital cost of certain energy efficient plant and machinery against corporation tax in year of purchase. The purpose of the ACA scheme is to encourage businesses to purchase plant and machinery that is highly energy efficient and thus make significant savings on energy costs and reduce carbon emissions. This has recently been extended in the 2011 Budget with an estimated take-up of €6 million.

**Maximising Ireland's Energy Efficiency – The National Energy Efficiency Action Plan 2009 – 2020:** Major Government policy document that sets out Government plans and actions to achieve its target of 20% energy efficiency savings across the economy by 2020. It was published on 8 May 2009. In addition Budget 2011 now offers income tax relief for energy efficient measures in houses of up to €2,000, with an estimated 15,000 houses expected to avail of this in 2011.

Northern Ireland

**CRC Energy Efficiency Scheme Order 2010 SI 768:** Establishes for the UK a new energy efficiency scheme designed to reduce carbon emissions through improving energy efficiency in public and private sector organisations that consume large amounts of electricity, gas and other fuels.

**Energy Efficiency (Northern Ireland) Order 1999 SI 659 (NI 3):** Allows the Department of Economic Development to promote efficient energy use in industry, and the Department of the Environment to promote efficient energy use in residential accommodation and public bodies.

**Energy Performance of Buildings (Certificates and Inspections) (Amendment) Regulations (Northern Ireland) 2009 SR 369:** Amends 2008/170 to change the enforcing authority from the Department of Finance and Personnel (DFP) to District Councils.

2.2 Trends

2.2.1 Current issues in the market

- The wider economic conditions and the current economic climate are stimulating businesses to diversify and seek out new areas to develop, where existing skills can be maximised and redeployed.<sup>19</sup> For example, companies involved in the construction and property sectors, have begun to include energy management activities in their portfolios either by providing additional services such as energy audits, or by creating new divisions within their businesses.
- An increasingly popular service offered by energy management companies is energy procurement, which entails the negotiation of prices and contracts on behalf of the client and the energy management company acts as intermediary between the client and the energy supplier.
- Building brand recognition and a strong market position in the domestic market is important for those SMEs in the sector who wish to export their products and services abroad.
- Accessing finance to support growth, particularly at the stage beyond start-up, is critical to the success of the energy management sector. This is particularly true in the area of developing new products and services, such as instrumentation or LED lighting (see Box 2). In the first half of 2010 the Cleantech group has reported that 70 venture capital deals have been completed totalling \$364 million in investment.

- Technical knowledge and value for money are essential ingredients in the positioning of energy management products and services as viable options for companies. To enhance the development and reputation of the industry, businesses offering energy management products need to provide customised end-to-end energy management solutions (including product supply, installation, and verification). At the moment companies are only beginning to take this approach which will be critical to moving up the value chain.
- There are many state agencies providing energy advice, which could lead to confusion for both domestic and business customers looking for energy efficiency solutions.

Box 2: Financing growth

ResourceKraft and NuaLight are two of Irelands success stories for raising venture capital to finance growth in a high tech sector.

ResourceKraft, based in the University of Limerick, began in 2007 and has developed their own technology-driven solution, ResourceKraftAdvisor. In April 2010 the Bank of Ireland Seed and Early Equity Fund and Enterprise Ireland provided an investment of €600,000 in the company to support the recruitment of skilled staff and expand market coverage beyond Ireland and the UK.

NuaLight, a Cork-based developer of LED illumination products for refrigerated displays in food retail, raised €9.1 million in April 2010 from Climate Change Capital Private Equity, 4th Level Ventures and ESB NovusModus. Its Vantium range of products has attracted customers in Northern America, the EU and beyond.

<sup>19</sup> Department of Enterprise, Trade and Investment, *A Draft Strategic Energy Framework for Northern Ireland* (2009).

2.2.2 Challenges

- Although the role of public policy and legislation is important for the market uptake of green sectors including energy management, there is the risk that government’s policy and funding supports contribute to a distorted market by championing large companies and thus creating a difficult environment for SMEs.
- In the current economic climate, cash flow is one of the challenges facing companies in the sector. In particular, SMEs find it difficult to match their long-term growth aspirations with the available cash flow. InterTradelreland’s Business Monitor for Q3 2010 reports that 64% of businesses interviewed see cash flow as a key issue affecting their competitiveness.
- Companies constantly need to identify and implement market differentiators to remain competitive as well as to recognise in advance the market trends and commercial opportunities of the industry in new areas such as smart grid, demand response mechanisms, automated controls etc.
- Given that a segment of this industry focuses on the development of high-tech tailored measurement and monitoring solutions, one of the challenges for some companies is to find the right mix of skills for their staff (see above). Technical knowledge, and the ability to translate it to satisfy client’s needs require experience and training.
- More awareness raising and education on the benefits of energy efficiency is still required across the island, both in the commercial and domestic sectors. For example, 45% of companies surveyed in the Business Monitor had not invested in energy efficiency products due to perception of cost.
- Tight budgets and cuts not only in the public sector but also in the private sector are likely to require more innovative financing solutions and business models. A result of this may be encouragement for the adoption of energy management services and supply contracts.

2.2.3 Opportunities

- Rising energy costs and the full roll-out of the Business Energy Rating (BER) / Energy Performance Certificate (EPC) are expected to act as drivers for the sector to become an area of potential high growth. Services such as the design and supply of energy saving systems for buildings across all sectors and BER/EPC verification, inspection and monitoring of buildings during construction are areas of opportunity for companies involved in this industry.<sup>20</sup>
- The implementation of green procurement guidelines in the public sector in Ireland and Northern Ireland could create significant opportunities for companies of the sector. The use of innovative procurement models (that focus on reducing demand and energy efficiency improvements) could develop the market of energy management service companies.
- Energy savings and carbon reduction targets for the public sector could also bring business opportunities for energy management companies. For example, in Ireland the Sustainable Energy White Paper sets a target of 33% energy savings by 2020 for the public sector and there is a commitment in the National Energy Efficiency Action Plan to renovate the existing stock of public buildings over 1000 m² to a BER rating of D1 or above. In Northern Ireland since 2008, large public buildings should have a Display Energy Certificate showing the energy performance of the building based on actual energy consumption as recorded annually over periods up to the last three years.<sup>21</sup>
- Energy efficiency targets for private and public sectors are bringing more support for innovation and technology testing. Innovation on energy efficiency technologies could increase the opportunities for SMEs in international markets.

<sup>20</sup> Department of Enterprise, Trade and Investment, *A Draft Strategic Energy Framework for Northern Ireland* (2009).  
<sup>21</sup> Department of Finance and Personnel, *Guide to Display Energy Certificates (DEC) and advisory reports for public buildings* (September 2008).

InterTradelreland included a section in the Q1 2010 Business Monitor on energy costs and efficiency practises in businesses.<sup>22</sup> The findings (based a survey of 1,000 companies across the island) found that energy costs are a significant challenge to competitiveness (see Figure 3) and the cost most businesses would like to reduce, providing potential opportunities for energy management companies (see Figure 4).

Figure 3: What is the most significant challenge to competitiveness of business at present?

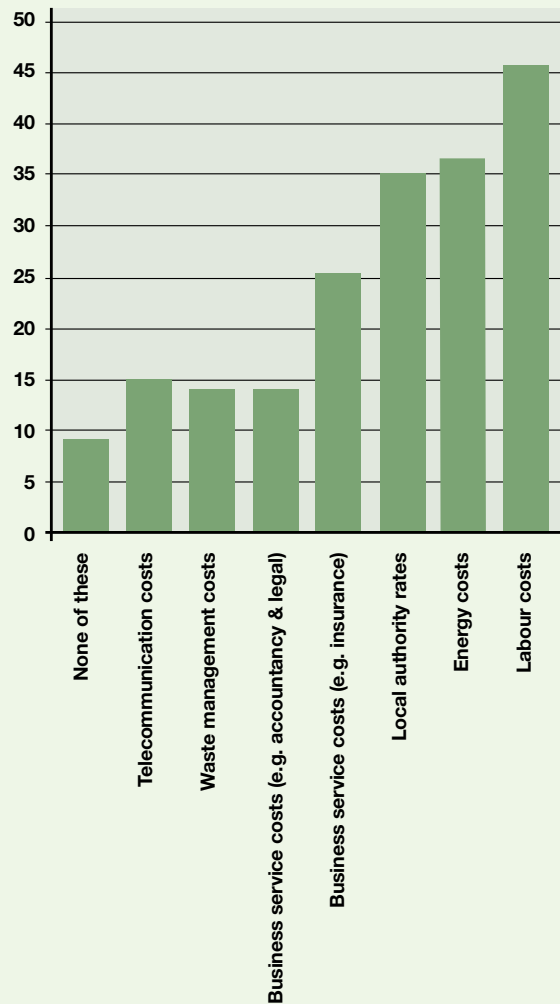
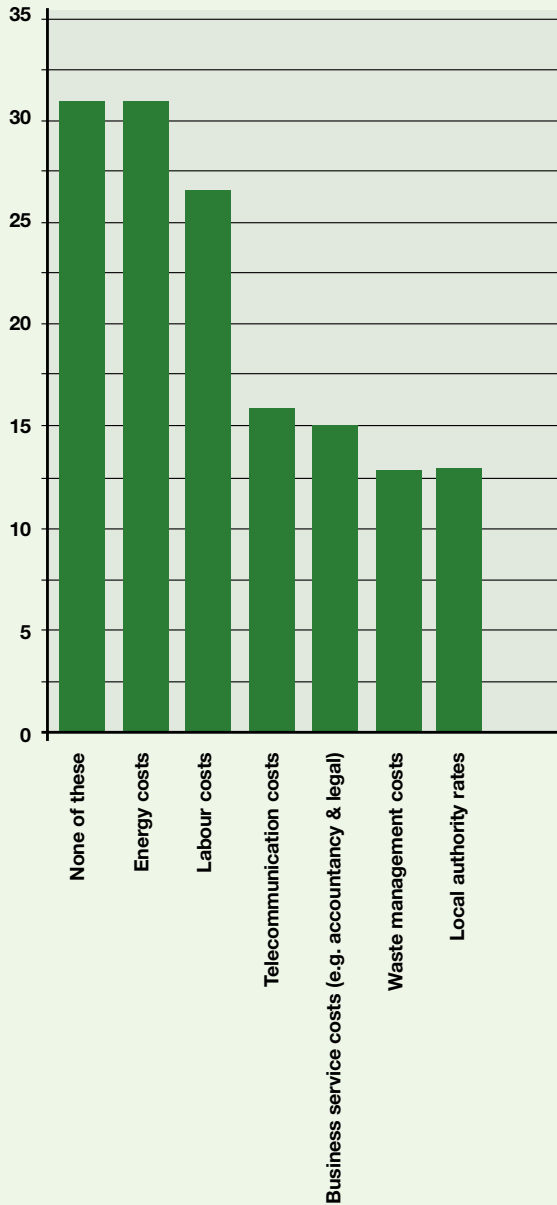


Figure 4: Which business costs are you most likely to try to reduce over the next six months?

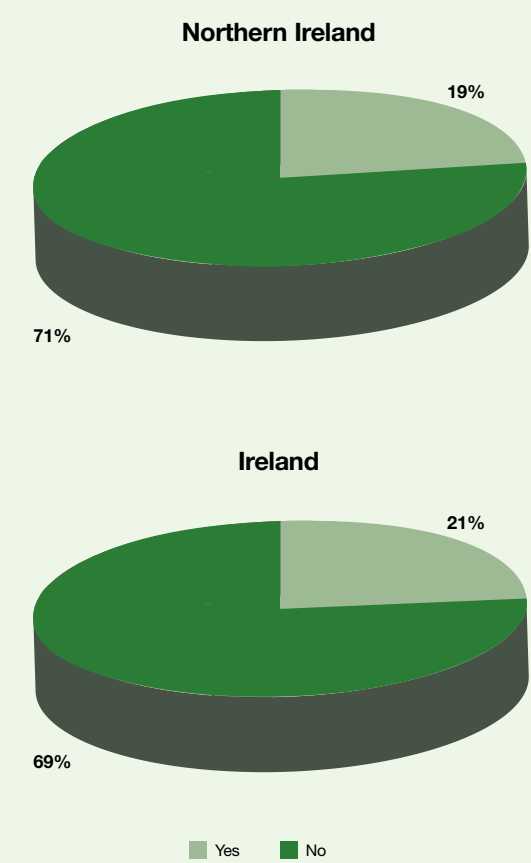


Moving from energy costs to demand for energy management solutions the key motivation for almost three quarters of companies (71%) to improve their energy efficiency is cost savings.

Source: InterTradelreland Quarterly Business Monitor Survey (Q1 2010).  
<sup>22</sup> InterTradelreland’s Business Monitor is an all-island survey of business sentiment surveying the views of 1000 owner/managers across the island every quarter. The energy section was included in Q1 (Jan-Mar) 2010.

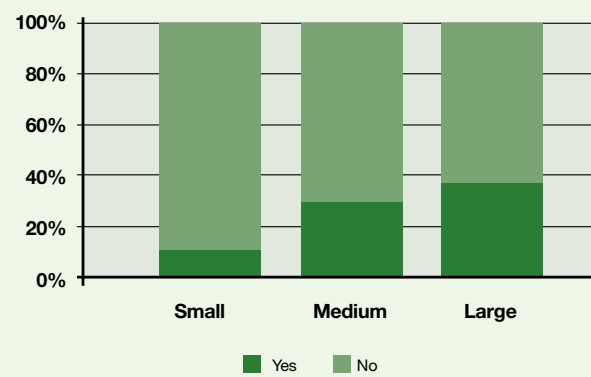
- The rising cost of energy and the current economic conditions are likely to increase demand for energy management. InterTradelreland's Business Monitor reports that around one in five companies (19% in Northern Ireland and 21% in Ireland) surveyed said they have plans to implement an energy efficiency scheme in the next two years.

**Figure 5: Companies that will implement energy efficiency schemes in the next two years (Q1 2010)**



- In terms of market segmentation the numbers currently involved in energy management increase with company size. Almost two in five (38%) companies with over 100 employees have conducted an energy audit in the past two years compared to one in ten (12%) of micro-enterprises. Given the relative size of energy bills and the resources, in terms of personnel and finance, to undertake energy management projects, this is not surprising. However, it also translates into a significant commercial opportunity given that over 95% of companies on the island have less than 100 employees.

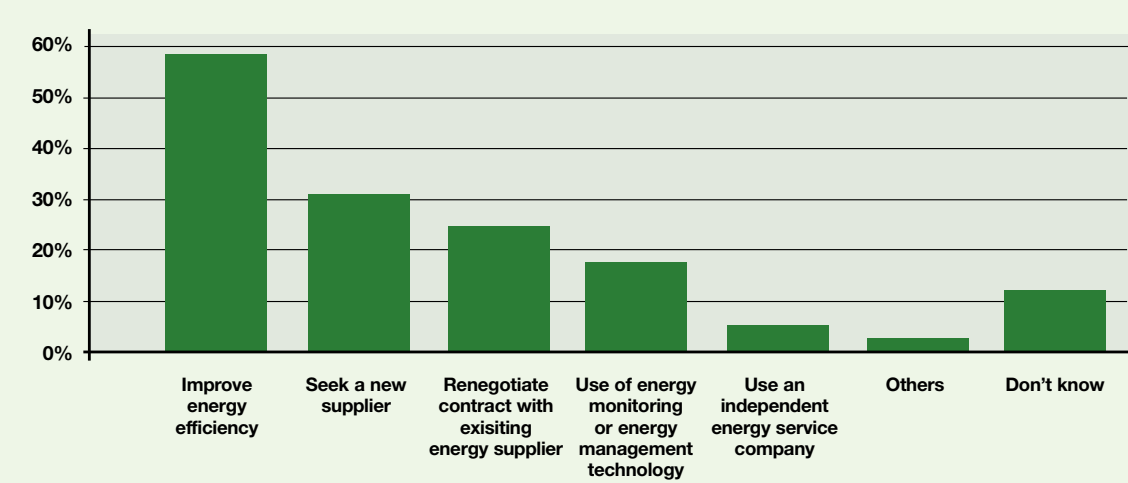
**Figure 6: Percentage of companies that undertook energy audits in the last two years by company size**



Source: InterTradelreland Quarterly Business Monitor Survey (Q1 2010)

- In the same Business Monitor companies were asked what measures they were likely to take in order to reduce energy costs. Improving energy efficiency was mentioned by the majority of companies (59%), followed by seeking a new supplier (31%) and renegotiating contracts (25%). The nature of these measures could represent a significant opportunity for companies offering energy procurement services and energy efficiency products (see Figure 7).

**Figure 7: Measures to reduce energy cost likely to be applied by companies on the island**



Source: InterTradelreland Quarterly Business Monitor Survey (Q1 2010)

- The European Union's goal for 80% of consumers to have smart metering systems by 2020 through national rollout plans, will bring vast opportunities for SMEs involved in data management, software development, building energy management and communications.<sup>23</sup>
- There are various supports available to promote the adoption of energy management and efficiency solutions by domestic and business customers in both jurisdictions. The list below (in Table 5) offers the potential to could increase the market uptake of the sector.

<sup>23</sup> Enterprise Ireland, 'Electricity meters to get smart', *Technology Ireland*, Vol 4/3 (July-Aug 2010).



Table 5: Energy efficiency-related supports available in Ireland and Northern Ireland

Type	Ireland	Northern Ireland
Business	<b>Energy Efficiency Retrofit Fund (EERF):</b> Support is available for buildings, services and facilities upgrades involving packages of energy efficiency investment actions. Projects are expected to relate mainly to thermal and electrical energy use in buildings. Grant support per project will not be less than €20,000 and will not exceed €500,000.	<b>NIE Energy LED lighting offer:</b> Support for installation of LED lights. The amount of support varies depending on the energy your LEDs will save.
	<b>SEAI's service for small and medium enterprises (SMEs),</b> which offers energy advice, assessment and monitoring, with the aim of cutting their energy use by 20%.	<b>Invest NI Carbon Trust Programme:</b> Energy efficiency design advice and free on-site energy surveys. These services are delivered by independent energy consultants and energy and technical audits may include up to 10 days' free consultancy.
	<b>Accelerated Capital Allowance: (ACA)</b> This scheme was introduced in the Finance Act 2008. This scheme enables businesses to write off the entire cost of a specified set of energy efficient motors, lighting and building energy management systems in the first year of purchase.	<b>NI Energy:</b> Free energy advice and energy audits for companies.
		<b>Energy Saving Trust Recommended:</b> certification scheme that manufacturers, suppliers and retailers can join to help their consumers identify the most energy efficient products in their ranges.
	<b>Greentech support for implementing environmental standards:</b> financial support for Enterprise Ireland clients to implement a range of certifiable environmental standards including energy management systems such as IS 393.	
	<b>Carbon footprint reduction and management support:</b> Assists companies with technical investigations, cost assessments and consultancy. Enterprise Ireland's clients can apply for support towards the cost of a qualified consultant for this end.	
Domestic	<b>Home energy saving scheme:</b> provides grants to homeowners who are interested in improving the energy efficiency of their home. The scheme is open to all owners of existing houses built before 2006. From 8th June 2010, a Building Energy Rating (BER) is an integral part of all grant applications under the Home Energy Saving scheme, whereby homeowners must undertake a BER on their home after grant aided works have been completed.	<b>Warm homes scheme:</b> Offers a range of insulation measures and energy advice to households on a qualifying benefit.
Public sector	<b>Energy Efficiency Retrofit Fund (EERF):</b> Support is available for buildings, services and facilities upgrades involving packages of energy efficiency investment actions. Projects are expected to relate mainly to thermal and electrical energy use in buildings. Grant support per project will not be less than €20,000 and will not exceed €500,000.	

2.2.4 Outlook

- In 2008, the energy management services market in North America earned revenues of \$20.35 billion and this figure is expected to double by 2013 due to favourable government legislation and increasing awareness about the benefits of energy management.<sup>24</sup> This could be also replicated on the island, where policy and legislation are pointing in the same direction.
- A recently published report found that the European smart meter industry is set to undergo a rapid growth, with 133 million to 145 million meters to be installed by 2020 and an approximate market value of €20 billion. As the smart meter market continues to expand it would be necessary to introduce a common set of standards that ensure the development of the sector.<sup>25</sup>
- As energy costs continue to rise and EU directives and targets tighten, the demand for energy management ICT solutions and services will increase.
- Policy and legislation are important drivers for the energy management market that could encourage a market uptake across the island and thus improve the opportunities of indigenous companies at the international level. However innovation is essential to provide the island with an early mover advantage.
- With the market uptake of renewable energy technologies and the continuous increases in energy prices, there will be the requirement for advances in the area of energy management and smart grid solutions in order to maximise energy efficiency, reduce grid fluctuations and improve renewable use.



**Biomass CHP** - The thermal energy created by combusting biomass can be turned into electricity via a biomass CHP plant.

<sup>24</sup> Frost & Sullivan, *North American energy management services - Investment analysis* (November 2008).

<sup>25</sup> Greenbag Research, *Europe's smart meter outlook for 2020: a market worth \$25bn* (August 2010).



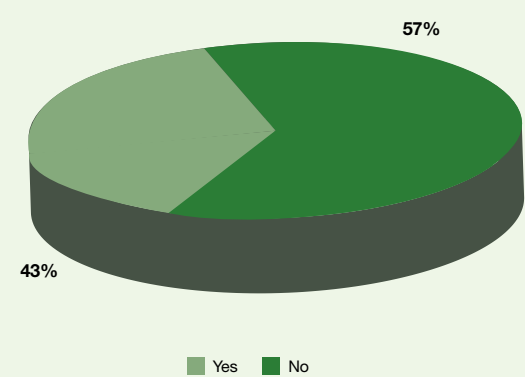
# 3. CROSS-BORDER INSIGHT

## 3.1 Cross-border trade

Energy management, as a relatively new sector concentrating on business services, does not appear as a major sector in cross-border trade statistics. When asked in the survey of energy management companies whether a company was currently undertaking cross-border trade more than 2 in 5 answered positively (as shown in figure 9). The survey found that companies involved in energy procurement services or offering energy management systems/products are most likely to be involved in cross-border trade.

Figure 8: Cross-border trade participation

Are you involved in cross-border trade activities?



## 3.2 Key North/South players

**InterTradelreland:** InterTradelreland is a body established to exchange information and co-ordinate work on trade, business development and related matters. Through the several programmes and research activities InterTradelreland helps expedite trade and business growth across the island and create a favourable business environment that increases the competitiveness of the two economies. InterTradelreland has supported companies in the sector, such as Imperative Energy (see Box 3), in the area of product/service development.

**North/South Energy Joint Steering Group:**

The Group was established in 2003 and comprises of senior officials from the Department of Communications, Energy & Natural Resources and Department of Enterprise, Trade and Investment, NI and the offices of the two Regulatory Authorities (Commission for Energy Regulation (CER) in Ireland and Northern Ireland Authority for Utility Regulation (NIAUR)). In both jurisdictions there exists top level political commitment to the development of competition in the energy sectors in the interests of delivering improved services and economic benefits to customers.

### Box 3: Cross-Border Trade and Business Development – A Case Study

Imperative Energy Ltd was launched in September 2007 by Eamon Ryan TD, Minister for Communications, Energy and Natural Resources. The company supplies biomass derived renewable energy to customers in the industrial, commercial and public sectors through purpose designed energy centres located at clients sites.

The company offers two primary product /service packages to over 20 installations across the UK and Ireland with the aim of doubling that in 2011:

1. Energy Supply Contract (ESCO) – a long term energy supply contract under which Imperative funds all the costs of the installation, and the customer is invoiced for metered energy use on a monthly basis at a pre-agreed index linked price. The ESCO model works on the basis of reducing risk with Imperative financing the capital cost and assuming responsibility for the biomass system (including fuel supply and maintenance).
2. System Supply and Install (SSI) where Imperative contracts to design, install and commission the equipment. Imperative can also offer a long term service/maintenance and fuel supply contract under this package.

**Cross border collaboration and trade:**

Imperative participated in InterTradelreland’s Fusion programme and, by being able to attract a high calibre graduate, their early stage growth was accelerated. According to Imperative’s Joe O Carroll, the programme’s combination of academic and practical challenges attracted a candidate that we otherwise would not have been able to bring into the company. The relationship we developed with our Knowledge Partner, University of Ulster, has been continued beyond the Fusion programme, as they have reviewed emerging gasification technologies, much to our satisfaction.

When asked about the benefits/opportunities of cross-border trade for the energy management sector, O’Carroll made the point that “in energy terms, Northern Ireland and Ireland, must pursue and implement policies that complement each other and that do not distort the respective markets.” Currently, with respect to the biomass sector, there are differences in the supporting environment which can lead to biomass flowing to the more attractive jurisdiction. This is clearly not in the interest of either region.

An important benefit of cross border collaboration for Imperative has been the role that developing relationships have played in helping to share experiences and ideas. According to O Carroll, this can help to ensure that the whole island becomes a more attractive place to develop renewable energy projects.”

Finally and practically he makes the point “Our first projects in the UK were in Northern Ireland and this helped us to springboard into Britain. Without having projects in the North it would have taken us longer to get established in the British market.”



**Energy Supply Contract (ESCO)** - a low risk option model that delivers energy cost savings and carbon emissions reductions.

# Annex 1

# Annex 1:

Companies involved in the energy management sector of the island of Ireland<sup>26</sup>

Company Name	Location
4FRONT ENERGY AND ENVIRONMENTAL LTD	IRELAND
A1 BUILDING ENERGY ASSESSORS LTD	IRELAND
ACTIVATION ENERGY LTD	IRELAND
ACTIVE ENERGY CONTROL LTD	IRELAND
ACTIVE THERMAL ENERGY BUILDING SERVICES LTD	IRELAND
ALAN DUGGAN ENERGY CONSULTANTS LTD (ADEC)	IRELAND
ALLEN ENERGY SAVING SOLUTIONS LTD	IRELAND
ALREADY ENERGY LTD	IRELAND
AUTHENTIC ENERGY MANAGEMENT SYSTEMS	IRELAND
BCD ENERGY CONSULTING IRELAND LTD	IRELAND
BER SERVICES - ENERGY CONSULTANTS LTD	IRELAND
BETTER ENERGY OPTIONS LTD	IRELAND
BIOPOWER ENERGY SAVINGS LTD	IRELAND
BRENNAN ENERGY ASSESSORS LTD	IRELAND
BUILDING ENERGY COMPLIANCE LTD	IRELAND
BUILDING ENERGY RATING PROFESSIONALS LTD	IRELAND
BUILDING ENVELOPE AND ENERGY CONSULTANTS LTD	IRELAND
BUILT ENVIRONMENTAL SUSTAINBLE RESEARCH & CONSULTANCY	IRELAND
CASEY TECHNOLOGY	IRELAND
CLYON CONTROLS LTD	IRELAND
CODEX ENERGY CONSULTANTS LTD	IRELAND
COMBINED ENERGY SOLUTIONS LTD (CES)	IRELAND
CONSERVATION ENGINEERING CONSULTANTS	IRELAND
CONSERVATION RENEWABLES ENERGY MANAGEMENT SYSTEMS (CREM) LTD	IRELAND
CORE ENERGY SOLUTIONS LTD	IRELAND
CROWLEY CARBON	IRELAND

Company Name	Location
DALKIA ENERGY & UTILITY SERVICES LTD	IRELAND/N. IRELAND
DCS ENERGY SAVINGS LTD	IRELAND
DOMESTIC ENERGY ASSESSORS NI LTD	NORTHERN IRELAND
DUFAR ENERGY ASSESSORS LTD	NORTHERN IRELAND
DURKAN ENERGY AND ENVIRONMENTAL SERVICES LTD	IRELAND
ECO LIFE ENERGY LTD	IRELAND
ECO SMART ENERGY SOLUTIONS LTD	IRELAND
ECOCELL ENERGY LTD	IRELAND
ECO-SCAN	IRELAND
EEH ENERGY EFFICIENT HOMES LTD	IRELAND
EFT CONTROL SYSTEMS	IRELAND
EIRDATA	IRELAND
ELEMENTAL ENERGY & ENVIRONMENTAL LTD	IRELAND
ENERGIA	IRELAND
ENERGY ADMINISTRATION SERVICES LTD	IRELAND
ENERGY ASSESSMENTS NORTHERN IRELAND	NORTHERN IRELAND
ENERGY ASSESSMENT NI LTD	NORTHERN IRELAND
ENERGY ASSURE LTD	IRELAND
ENERGY CERTIFICATION NORTHERN IRELAND LTD	NORTHERN IRELAND
ENERGY CHECK IRELAND LTD	IRELAND
ENERGY CONSULTANCY ASSOCIATES LTD	NORTHERN IRELAND
ENERGY CONTROL IRELAND LTD	NORTHERN IRELAND
ENERGY FIRST NI	NORTHERN IRELAND
ENERGY FOOTPRINT NORTHERN IRELAND LTD	NORTHERN IRELAND
ENERGY LIBERATORS LTD	IRELAND
ENERGY MATTERS (NI) LTD	NORTHERN IRELAND

<sup>26</sup> This is non-exhaustive list of companies involved in the energy management sector of the island of Ireland. Companies were selected from listings from Dun & Bradstreet database.

Company Name	Location
ENERGY MATTERS LTD	IRELAND
ENERGY MONITORING IRELAND LTD	IRELAND
ENERGY NUA LTD	IRELAND
ENERGY PERFORMANCE (NI) LTD	NORTHERN IRELAND
ENERGY PERFORMANCE ASSESSMENTS LTD	NORTHERN IRELAND
ENERGY PERFORMANCE ASSESSORS IRELAND LTD	NORTHERN IRELAND
ENERGY QUARTER LTD	IRELAND
ENERGY RATE IRELAND	IRELAND
ENERGY SAVE DESIGN AND CONSULTING LTD	NORTHERN IRELAND
ENERGY SAVERS	IRELAND
ENERGY SENSE IRELAND LTD	IRELAND
ENERGY SERVICES LTD	IRELAND
ENERGY SOLUTIONS LTD	IRELAND
ENERGY WATCH AUDITS LTD	IRELAND
ENERGY WISE	IRELAND
ENVIRONMENTAL BUILDING SOLUTIONS NI	NORTHERN IRELAND
ESB INDEPENDENT ENERGY	NORTHERN IRELAND
ESB INDEPENDENT ENERGY LTD	IRELAND
EVOLUTION ENERGY LTD	NORTHERN IRELAND
F&D DEVELOPMENTS	IRELAND
FERNGREEN-RENEWABLE ENERGY CONSULTANTS	IRELAND
FMC SERVICES	NORTHERN IRELAND
FODEX ENERGY RATING LTD	IRELAND
FUTURE ENERGY	IRELAND
GALVIN CONSULTING ENGINEERS & ENERGY ASSESSORS LTD	IRELAND

Company Name	Location
GEM UTILITIES	IRELAND
GF ENERGY MANAGEMENT SOLUTIONS LTD	IRELAND
GLAS RENEWABLE ENERGY SOLUTIONS	IRELAND
GLOBAL ENERGY MANAGEMENT LTD	IRELAND
GLOW ENERGY RATING IRELAND LTD	IRELAND
GM GREEN ENERGY RATINGS LTD	IRELAND
GREEN ENERGY TECHNOLOGY	NORTHERN IRELAND
GREENER ENERGY HOMES ASSESSORS LTD	IRELAND
GREENLINE ENERGY ASSESSORS LTD	IRELAND
GSH IRELAND LTD	IRELAND
H & S ENERGY SOLUTIONS LTD	IRELAND
HANLEY ENERGY LTD	IRELAND
HEAT (HOME ENERGY & ASSOCIATED TECHNOLOGIES) LTD	IRELAND
HOME ENERGY ASSESSORS IRELAND LTD	IRELAND
HOWARD ENERGY SAVING SOLUTIONS LTD	IRELAND
HUGHES ENERGY SYSTEMS LTD	NORTHERN IRELAND
IHER ENERGY SERVICES LTD	IRELAND
IMPERATIVE ENERGY LTD	IRELAND
IRISH BUILDING ENERGY RATING ASSESORS (IBERA)	IRELAND
K.G. ENERGY SOLUTIONS LTD	IRELAND
KING ENERGY ASSESSORS	IRELAND
KORE ENERGY LTD	IRELAND
KYRON ENERGY & POWER LTD	IRELAND
LMC ENERGY SOLUTIONS LTD	IRELAND
LONGSHIPE ENERGY LTD	IRELAND

Company Name	Location
MALACHY WALSH AND PARTNERS	IRELAND
MEASURit	IRELAND
MUNSTER ENERGY RATINGS LTD	IRELAND
MY ENERGY AUDIT LTD	IRELAND
NATIONAL ENERGY ASSESSORS IRELAND LTD	IRELAND
NATIONAL IRISH CENTRE FOR ENERGY RATING LTD	IRELAND
NRG ONE STOP ENERGY SOLUTIONS LTD	IRELAND
OMS GREEN	IRELAND
P&A QUINN ENERGY LTD	NORTHERN IRELAND
POWERTHERM SOLUTIONS	IRELAND
PROPERTY ENERGY ASSESSORS LTD	IRELAND
PURE ENERGY TECHNOLOGY LTD	IRELAND
RENEWABLE BUILDING TECHNOLOGIES LTD	NORTHERN IRELAND
RENEWABLE ENERGY MANAGEMENT SERVICES LTD	IRELAND
RESOURCE KRAFT	IRELAND
S D S ENERGY LTD	NORTHERN IRELAND
SAFE ENERGY SYSTEMS LTD	IRELAND
SC ENERGY RATING SERVICES	IRELAND
SELECT ENERGY SOLUTIONS	IRELAND
SES SMART ENERGY SYSTEMS LTD	IRELAND
SLANE ENERGY SOLUTIONS LTD	IRELAND
SYCAMORE ENERGY RATINGS LTD	IRELAND
SYSTEMLINK LTD	IRELAND
TECHNICAL ENERGY SOLUTIONS LTD	IRELAND
THE DUBLIN ENERGY RATING CO. LTD	IRELAND

Company Name	Location
THE ENERGY DOCTOR LTD	IRELAND
THE ENERGY RATING ASSESSMENT COMPANY LTD	IRELAND
THINK ENERGY LTD	IRELAND
TOTAL ENERGY SOLUTIONS	IRELAND
VECTOR FM	IRELAND
WIRELITE SENSORS	IRELAND
WATER ENERGY CONSERVATION SOLUTIONS LTD	IRELAND
WOW ALTERNATIVE ENERGY & ENVIRONMENTAL SOLUTIONS LTD	IRELAND





The Trade and Business Development Body  
The Old Gasworks Business Park  
Kilmorey Street  
Newry  
Co Down  
BT34 2DE

**Telephone:** 028 3083 4100 (048 from Ireland)

**Fax:** 028 3083 4155 (048 from Ireland)

**Textphone:** 028 3083 4169 (048 from Ireland)

**Email:** [info@intertradeireland.com](mailto:info@intertradeireland.com)

**Web:** [www.intertradeireland.com](http://www.intertradeireland.com)